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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,053	12/22/2004	Ramon Pascal Van Gorkom	NL 020568	6802
24737 7590 09/11/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER PERRY, ANTHONY T	
			ART UNIT 2879	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/519,053	Applicant(s) VAN GORKOM ET AL.	
	Examiner Anthony T. Perry	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

The Amendment, filed on 6/22/07, has been entered and acknowledged by the Examiner.

New claims 8-13 have been entered.

### *Claim Objections*

Claim 5 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim (claim 4). See MPEP § 608.01(n).

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-7 rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The acceleration electrode (8) which is applied with an acceleration voltage is critical or essential to the practice of the invention, but is not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). If there is no acceleration electrode located under the phosphor layers located on either side and below of the cathode, the secondary electrons will not be directed towards the phosphor and the device will not work. Furthermore, claims 2-3 refer to an acceleration voltage being applied to the device, but does not mention what part of the device it is applied to. The acceleration voltage is applied to the acceleration electrode (8), which is not claimed.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 5, 8, 9, and 12 rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (US 5,973,449).

Regarding claims 1 and 4, Nakamura et al. disclose a cathodoluminescent gas discharge display comprising a defined, gas-filled space (113), an anode (112) and a cathode (94) adapted to receive an electrical voltage and a luminescent screen comprising a phosphor (107R,107B,107G), wherein, when an electrical voltage is applied across the anode (112) and the cathode (94), a plasma comprising ions and electrons is generated by a gas discharge in the gas-filled space (113), said plasma ions impact on the cathode (94), and secondary electrons are created by said impact, characterized in that the anode (112) is provided on a rear substrate (in a rear section of the display) (92), the cathode (94) and the luminescent screen (107) are provided on a front substrate (in a front section of the display) (93), and said secondary electrons are used to excite the phosphor (luminescent substance) (107) (for example, see col. 19, line 48 – col. 21, line 30, the abstract, and Fig. 30).

Regarding claim 2, the voltage applied to the cathode (94) and anode (112) causes ions and electrons to be accelerated within the discharge space (113) causing secondary electrons to be emitted from the cathode (94) to the phosphor screen (107), and therefor the applied voltage is considered to be an acceleration voltage (for example, see col. 19, line 48 – col. 21, line 30, the abstract, and Fig. 30).

Regarding claim 5, the cathode (94) comprise a base layer (95) and a coating (96) of high secondary electron emitting material (for example, yttrium oxide) (for example, see col. 19, line 48 – col. 21, line 30, the abstract, and Fig. 30).

Regarding claims 8 and 12, Nakamura et al. disclose a cathodoluminescent gas discharge display comprising a defined, gas-filled space (113), an anode (112) a cathode (94) adapted to receive an electrical voltage and a luminescent screen comprising a phosphor (107R,107B,107G), and wherein, when an electrical voltage is applied across the anode (112) and the cathode (94), and an acceleration voltage is applied to the acceleration electrode (102) a plasma comprising ions and electrons is generated by a gas discharge in the gas-filled space (113), said plasma ions impact on the cathode (94), and secondary electrons are created by said impact, characterized in that the anode (112) is provided on a rear substrate (in a rear section of the display) (92), the cathode (94), the acceleration electrode (102), and the luminescent screen (107) are provided on a front substrate (in a front section of the display) (93), and said secondary electrons are used to excite the phosphor (luminescent substance) (107) (for example, see col. 19, line 48 – col. 21, line 30, the abstract, and Fig. 30).

Regarding claim 9, the luminescent substance (107R,107B,107G) touches (is disposed on) a side portion of the acceleration electrode (102).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6, 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 5,973,449).

Regarding claims 3 and 10-11, Nakamura does not specifically recite a range for the acceleration voltage applied to the device. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a suitable/optimal range for the value of the applied voltages, since optimization of workable ranges is considered within the skill of the art.

Regarding claim 6, Nakamura does not specifically recite a range for the thickness of the cathode electrode (94,102). However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a suitable/optimal range for the thickness of the cathode, since optimization of workable ranges is considered within the skill of the art.

Regarding claim 13, Nakamura discloses the claimed invention except for the acceleration electrode comprising indium tin oxide. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use

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as a matter of obvious design choice. ITO is a well known material used for forming electrodes in display devices. Accordingly, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used any known electrode material, including ITO for forming the acceleration electrode, since the selection of known materials for a known purpose is within the skill of the art.

Claims 6 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 5,973,449), as applied to claim 1, above, in view of Seats et al. (US 5,663,611).

Regarding claims 7, Nakamura teaches a cone-shaped cathode (126) in an embodiment shown in figure 31, but does not specifically state that such a cone-shaped emitter can be used in the display shown in figure 30.

However, Seats et al. teach the use of a cone-shaped cathode emitter used as the cathode in a plasma display device (same type of device shown in figure 30 of the Nakamura reference). Nakamura teaches that a cathodoluminescent gas discharge display using such cone-shaped cathode emitters results in a display device that requires a low initiation voltage, requiring low voltage driver circuits, which can reduce the cost, be more compact, and result in lower heat dissipation than in conventional cathodoluminescent gas discharge displays (for example, see Figs. 2-3 and col. 4, line 61 – col. 5, line 9). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use cone-shaped cathode emitters as the cathodes of the Nakamura reference, in order to provide a more efficient compact display.

Regarding claim 6, Seats teaches the cone-shaped cathodes having a thickness of 1-2 microns (between 100nm and 100 microns) (for example, see col. 3, lines 64-67).

The same reasons for combination given in the rejection of claim 7, above, apply.

***Other Prior Art Cited***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wang et al. (US 6,486,599) and Lee et al. (US 2002/0175617) disclose devices similar to one claimed.

***Response to Arguments***

Applicant's arguments filed 6/22/07 have been fully considered but they are not persuasive.

With respect to the Applicant's arguments against the 112 rejections, the Examiner respectfully disagrees. The Examiner agrees that "the entire disclosure must be considered" when determining if whether an unclaimed feature is critical. It is noted that the submitted drawings are part of the disclosure. It is also noted that not a single embodiment is taught in "the entire disclosure" that does not include an acceleration electrode. The acceleration electrode appears to be a critical limitation. If the Applicant continues to disagree, he is asked to explain how the device will work without the use of an acceleration electrode, specifically, how the secondary electrons excite the luminescent substance on the screen which is located at a front section of the display along with the cathode electrode. It is the position of the Examiner that without an acceleration electrode the secondary electrons will simply be attracted to the anode towards the rear section of the display, and not towards the luminescent screen located in the front section of the display.

With respect to the Applicant's arguments concerning the rejections involving the Nakamura reference, the Examiner respectfully disagrees. The Examiner agrees that the device taught Nakamura primarily uses ultraviolet light to excite the phosphors layers. However, it is



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noted that the application of the voltage potential between the cathode and the anode will ionize the gas, which produces electrons and gaseous ions. The electrons will be accelerated towards the anode and the ions will be accelerated towards the cathode such that particles are constantly colliding such that they release photons (in the form of ultraviolet light). Inherently some of the ions will impinge on the cathodes, resulting in the cathode releasing secondary electrons. Some of these secondary electrons will collide with particles in the plasma also creating ultraviolet radiation. Therefore, since ultraviolet radiation excites the phosphors in the display device and the secondary electrons produce ultraviolet radiation, the secondary electrons are used to excite the luminescent substance.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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### Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (571) 272-2459. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Anthony Perry/

Anthony Perry  
Patent Examiner  
Art Unit 2879  
August 31, 2007



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